



# THE Agricultural Situation

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# Labor Productivity

## in agriculture and industry

**T**HE PRODUCTIVITY of our labor force determines in a large measure how much we have to spend and how much we can buy of the products from our farms and factories; and this in turn has much to do with the welfare of individuals and the Nation.

For the greatest benefits to be realized, productivity of labor in each part of our economy must be in line with others. For one important part cannot continue long to prosper if other segments lag. Farm people are vitally concerned with the efficiency of labor used in production of machinery, clothing and other things they buy. And factory and office workers are as much concerned about the productivity of farm workers.

The chart shows the accomplishments made in both agriculture and industry. Year by year for 3 decades, output from an hour of work of both groups has increased as the result of more and better labor-saving machines, other capital investments, and improved know-how of workers. The increase in agriculture lagged behind industry from 1919 until the late 1930's, but agriculture has kept pace with industry since about 1933.

### Circumstances Differ

Individual comparisons can be made in general terms only as each industry and each type of farm operates under different circumstances. Identical changes in production per hour may result from different causes. Then, too, industry is more specialized than agriculture. In many factories, work of some workers is so repetitious that it is almost mechanical. No such specialization occurs in farming even though the daily pattern for some jobs, varies little. In addition, a factory usually turns out a few similar products while most farms produce many different kinds of crops and livestock.

Since the end of World War I, gains in production per man-hour have been

greater in industry than in farming, primarily because of the strides made in industry before World War II. Productivity of agricultural labor would have risen more if demand for farm products had been higher. The potentialities were there, but it took the upward surge of wartime demand to realize them. Much of the technological progress that contributed to the advance during World War II resulted from wider application of previous discoveries. Weather that was better than average also helped.

### Rail Spurt During War

Labor productivity of agriculture and the railroad industry increased at about the same pace from 1933 until we entered the war. The phenomenal increase in both freight and passenger traffic during the war far exceeded the gain in man-hour inputs, resulting in a big increase in labor productivity in 1942 and 1943. As far as passenger travel is concerned, the measure of production used does not take into account the discomfort resulting from overcrowded cars and the pressing into service of old and out-of-date equipment. But gigantic troop movements were executed and huge quantities of war material were hauled.

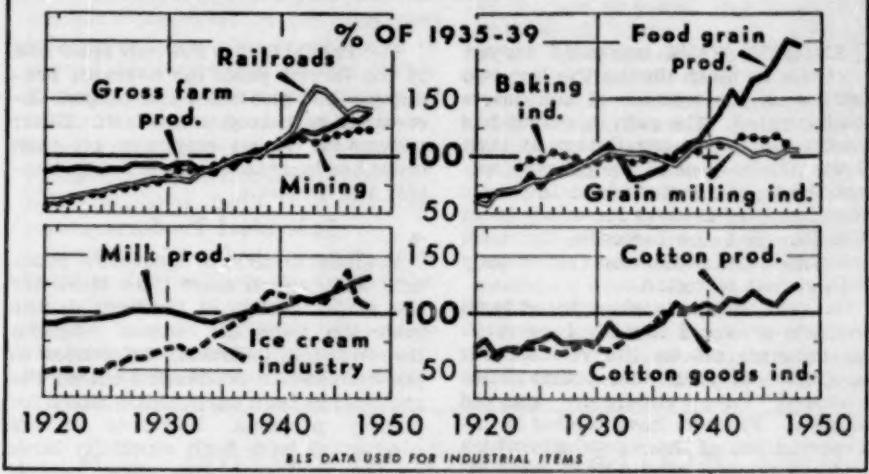
Productivity of labor in the railroad industry began declining in 1944 and by 1946 was only slightly above gross farm production per hour.

No other farm product and probably no old and established industry can match the gains made in production of food grains per hour of labor during the last 30 years. The climb was even steeper for wheat.

Production of food grains and the manufacture of flour per man-hour ran a similar course from 1919 until 1931. Drought and depression caused a big drop in grain but flour was much less affected. The recent drop in production per hour in milling resulted

# PRODUCTION PER MAN-HOUR

## On Farms and in Selected Industries



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partly from the fact that the milling industry was low on the wartime priority list and little new machinery was available. The baking industry has made a moderate gain in labor productivity since 1923—nearly all of it since 1937.

Comparison of the production of milk and ice cream per hour of labor is in some respects inappropriate because man has produced milk from time immemorial while its manufacture into ice cream is a relatively recent development. As a young industry, the manufacture of ice cream was more subject to rapid improvement. Plants and machines were improved rapidly and have increased in size as production has mounted. Because of this, the rise in labor productivity in making ice cream has been far greater than that in production of milk. The sharp increase in the quantity of ice cream frozen also has helped in this direction.

Production of cotton and cotton goods per man-hour followed a similar course from 1919 to 1939. Labor productivity on cotton farms has continued upward since 1939 but at a less rapid rate. Although there has been

some mechanization of cotton production, the big increase in yields was chiefly responsible for the rise in production per man-hour.

Not enough information is available to make detailed comparisons of labor productivity between agriculture and many other industries, particularly the service industries such as wholesaling and retailing. However, production per hour of service workers probably has risen less than in agriculture. Data also is lacking on productivity of labor used in processing and marketing of many farm products.

Continued advance in the productivity of farm labor will depend, partly at least, on the ability of industry to provide machines, gasoline, and other materials and supplies to farmers at a reasonable cost. Increasing productivity of industrial labor likewise depends on the availability at reasonable rates of agricultural raw materials for factories and of food for industrial workers. Because of this interdependence, the productivity of farm and industrial workers must move upward together to provide for a continued general rise in the level of living.

Reuben W. Hecht  
Bureau of Agricultural Economics

# The *Changing Pattern* Of Farm Production

FARMERS HAVE increased output twice as much during the last two decades as the number of consumers has increased. The gain in output has outrun the rise in population in each of the nine regions of the country, except the Pacific States where 18 people were living in 1945-49 for every 10 in 1925-29. But the increases for both production and population vary greatly from region to region.

Not only has the total output of farm products produced increased by varying amounts among the regions, but quantities of individual commodities produced have undergone marked changes. Farmers have tended to increase output of those products which they can produce profitably in competition with farmers from other areas. In general, these shifts have resulted in more efficient use of land, labor, machinery and other agricultural resources. The amount of land being farmed in each region has changed little.

## Output Exceeds Production

The table on the next page shows the changes in population, farm production and farm output among the regions from 1925-29 to 1945-49. The difference between "farm production" and "farm output" arises chiefly from the fact that farm production includes farm produced horse and mule power, while farm output measures only farm production for human consumption. Because of the decline in the number of horses and mules, farm output has gone up more than farm production in every region of the country.

Livestock production has expanded most in the South Atlantic, Pacific, and New England regions. Farming throughout the South has been shifting more and more to a livestock basis and the production of animal products in that area has increased more than in other regions. In most cases, production of feed crops has expanded most in regions where livestock production has made the greatest gains.

The Pacific States not only show one of the largest gains for livestock production but also show the biggest increase in cash-crop production. Other regions in which emphasis on cash crops has increased are the North Central and Western.

## Individual Products

Regional trends for individual products differ much more than those for the major groups of products as the table on page six shows. Among the livestock products, differences in the increases in production among the regions has been particularly sharp for poultry products. Increases in egg production have been especially large in the northeast and north central areas. Production of chickens has risen far more in the regions along the Atlantic and Pacific coasts than elsewhere, largely because of the rapid rise of commercial broiler production.

Production trends for cash crops show greater changes than those for animal products. For example, production of potatoes has gone up greatly in the Northeast and West, but has gone down in the mid-west. Cotton production has decreased nationally as the result of reductions in the South but it has increased greatly in the West. In the case of oil-bearing crops, soybeans, flaxseed and peanuts, the geographic pattern of production has been affected by the phenomenal increase in soybeans in the North Central region.

Trends in production of individual products by States or smaller areas would show even sharper changes than those by regions.

These production adjustments among the regions over the last two decades have been brought about by changes in costs of production and in market outlets and prices. One of the main factors affecting costs of production in one region as compared with others, is the difference in the rates of adoption of improved techniques of produc-

tion. Also important is the fact that supplies and prices of the various resources used in farming have changed differently among the regions.

Market outlets and prices to farmers for a particular region have been affected considerably by the rate of growth of population in the region. Population growth has been most rapid in the Pacific, Mountain and South Atlantic regions. Prices of many farm products in western markets especially, have increased more than in other regions.

Markets and prices for farm commodities produced in one region also are affected by changes in farm production in other regions. Since farm products move freely between regions in the United States, market outlets

and prices for products from one region may change because of increases or decreases in the supply from others.

Take eggs as an example. Demand for eggs has increased in all regions in the last 20 years. But demand for eggs from farms in the northeast would have increased more and their prices would have been higher in recent years if supplies from the midwest had not increased so much. At the same time, of course, the large expansion in egg production in the northeast also affected demand for eggs from the midwest. And the large increases in supply from both areas affected market outlets and prices for eggs in the south and west. Similar changes have occurred for other products.

Further changes in the regional pattern of farm production undoubtedly will occur in the future. Changes

## GAINS IN POPULATION AND FARM PRODUCTION, 1925-29 TO 1945-49



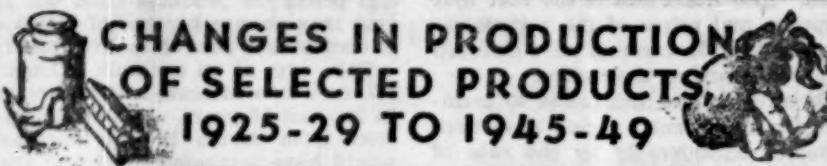

REGION	POPULATION	FARM PRODUCTION			OUTPUT FOR HUMAN USE <sup>1</sup>
		ALL LIVESTOCK *	CROPS & PASTURE ▲	GROSS <sup>○</sup>	
New England	11	38	24	29	44
Mid. Atlantic	15	19	18	19	32
E. N. Central	16	25	35	32	49
W. N. Central	3	12	19	17	32
S. Atlantic ....	25	54	35	39	52
E. S. Central ..	11	29	18	21	33
W. S. Central	18	25	4	9	23
Mountain ....	23	16	31	27	41
Pacific .....	82	42	70	63	73
U. S. .......	19	25	26	25	40

\* PRODUCT ADDED BY ALL LIVESTOCK, EXCLUDES FEED CONSUMED

▲ TOTAL OF ALL FARM PRODUCED PASTURE, FEED AND OTHER CROPS

○ PRODUCT ADDED BY ALL LIVESTOCK PLUS CROP AND PASTURE PRODUCTION

1 GROSS FARM PRODUCTION MINUS VALUE ADDED BY HORSES AND MULES



# CHANGES IN PRODUCTION OF SELECTED PRODUCTS, 1925-29 TO 1945-49

REGION	MILK	EGGS	CHICKENS	POTATOES	COTTON	OIL CROPS
	%	%	%	%	%	%
New England	6	167	239	76	—	—
Mid. Atlantic	24	76	102	22	—	—
E. N. Central	36	40	19	-40	—	3,269
W. N. Central	11	60	8	-17	75	241
S. Atlantic ....	37	33	243	- 7	-40	129
E. S. Central...	32	28	20	19	-10	321
W. S. Central	19	35	23	3	-32	758
Mountain ....	16	35	17	75	121	30
Pacific .....	46	23	86	211	396	—
U. S. .......	26	48	51	23	-21	385

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could come quickly if international developments increase the need for some products or affect supplies of machinery, fertilizer, labor and other items. Over the longer run, however, total demand for farm products will continue to expand as the population grows. Rates at which supplies are increased will differ between products. If the long-term trends toward higher levels of per capita consumption for livestock products, fruits, and vegetables and lower levels for grains, potatoes, and other items are continued, demands would be modified considerably.

### Opportunities Differ

Different regional adjustments in farm production also will be desirable because conditions affecting production costs will differ between regions. The possibilities of reducing costs and expanding output through mechanization, use of more fertilizer, higher-yielding crops, and more productive

livestock are not the same for all regions. For example, further expansion in livestock products throughout the South can be expected from higher yields of feed crops and more productive livestock.

### Supplies a Factor

In addition, the regional adjustments in production that farmers in each region find it desirable to make will depend upon the effects of changes in supplies from competing regions on market outlets and prices for their products. For example, expansion of potato production in the West may continue to reduce market outlets for potatoes from the South Atlantic region. But expansion of livestock production in the South might have little influence on present markets of northern farmers because most of the additional output would be consumed in the South.

R. P. Christensen

Bureau of Agricultural Economics

# *Meeting Weather Risks*

## *in western Kansas*

THE WEATHER has a closer connection to the farmers' pocketbook in western Kansas than it does in many other parts of the country. The income a farmer gets in any one year depends pretty largely on the outcome of the wheat crop, and the wheat crop, in turn, depends on the amount of rain that falls. The amount of rainfall is sufficiently erratic from year to year that a farmer can't be sure whether the next season will bring him feast or famine.

Over a farmer's lifetime, good and poor crops are likely to average out and his income may average high enough to provide a living for his family and a reasonable return on his investment in his farm. But he can't live on a long-time average income in poor years, especially if they come early in his farming career. A single crop failure can cause serious financial difficulties, and a series of poor years, such as those from 1932 to 1939, may put the farmer out of business.

### **Methods Studied**

Several methods have been used by western Kansas farmers to even out the fluctuation in income between years of bumper crops and years of crop failure. Some have saved part of their income in good years for spending in the poor years. Others rely on credit, borrowing in poor years and repaying the debt in years when crop yields improve. Some store grain or feed on the farm for sale in seasons when crops are poor. Many farmers have used crop insurance to protect themselves against the erratic western Kansas weather.

A study has been made by the Bureau of Agricultural Economics to test the effectiveness of these measures. In the study, a budget was developed for wheat farms typical of western

Kansas in 1948. The farm has about 600 acres with 230 acres of wheat, 60 acres of other crops and 65 acres of summer fallow. The budget covered a period of 34 years.

It was assumed that crop yields on this farm would be the same as those reported by the State Experiment Station at Colby, Kansas, from 1915 to 1948. To eliminate the effect of price changes on income, constant prices were used in valuing goods bought and sold. Prices received for products sold from the farm were set at 150 percent of the 1910-14 level and prices paid for production items were fixed at 175 percent of 1910-14. At the level of prices assumed in the study, \$1,400, after taxes, was considered to be the lowest net income that would cover minimum living expenses for a farm family of four.

### **Three Kinds of Operators**

Income from the farm for the 34-year period was calculated for 3 types of farm operators: a debt free owner, a tenant with a crop-share lease, and the owner with a mortgage debt of 75 percent of the value of the real estate, amortized over the entire period.

It was found that over the 34 years, the net income, after taxes, of the debt-free owner fell below the \$1,400 minimum needed to cover family living expenses in 10 years and in 3 of these years was a net loss. The owner with the mortgage had an income below the minimum in 14 years with a net loss in eight. The tenant's income fell below the minimum in 10 years. He had no deficit years, chiefly because he did not have some of the fixed charges that accompany land ownership.

For a debt-free owner to maintain his income at a minimum of \$1,400 in each of the 34 years, he would have had to save 16 percent of the income above

the minimum in favorable years. The tenant would have had to save 21 percent of his surplus and the owner encumbered with a mortgage, 60 percent.

The rates at which the debt-free owner and the tenant would have to save appear to be within reach. However, the encumbered owner would be able to save 60 percent of his surplus only by using unusual restraint in spending for family living or additional investment in the farm during favorable years.

The major difficulty likely to be encountered in trying to build up a reserve through savings is that poor crop years may occur before the reserve is accumulated. In that case, the operator may have to borrow to meet family living expenses. An attempt to finance a long period of unfavorable years by borrowing would lead to debt that would require several favorable years for repayment. It would be practicable for a western Kansas wheat farmer to use credit to stabilize his income only if the debt contract does not require payment until crop yields improve.

#### Grain Reserve Method

Another type of reserve widely used by wheat farmers is grain stored on the farm. However, the study showed that the effectiveness of this method is limited. If the encumbered owner, for example, had storage facilities for 5,000 bushels of wheat, he could have a more stable income by placing wheat in storage during favorable years and withdrawing it in poor years. But in 7 of the 34 years, his income still would drop below the \$1,400 minimum and in 5 of these years he would have a net loss.

One advantage of the grain storage plan is that it enables a farmer to reduce the amount of income tax he will have to pay over a period of years. By reducing the amount of grain sold in years when his income is high, he reduces his taxable income and thus avoids the higher surtax rates. By selling the stored grain in years when his income is low, he may be able to increase his income enough to take full advantage of his tax exemption.

Wheat crop insurance is a third method used by western Kansas farmers to offset yield risks. Federal insurance now is available in only a limited

number of counties but it is intended that the program be expanded as insurance methods are improved. Multiple crop insurance—insurance of the joint yield of several crops under one contract—has been offered experimentally in a few counties since 1948.

Crop insurance also affords only limited protection. If, for example, the encumbered owner insured his wheat crop, his net income still would fall below the \$1,400 minimum in 14 of the 34 years though the number of years in which he would have a net loss would be reduced from 8 to 6. If all his grain crops were insured under a multiple insurance contract, years of deficit income would be avoided. But the number of years in which his net income would be below the minimum would be the same as without the insurance.

By insuring crop yields, the operator largely avoids the risk of financial loss. But it is still uncertain whether he can maintain an adequate income for family living.

Like the grain reserve method, crop insurance also enables farmers to reduce the amount of income tax paid over a period of years. The insurance premium paid by the farmer may be used as a tax deduction. Although the indemnity is taxable, it is received at a time when taxable income otherwise would be low.

#### No Answer Yet

None of the methods above seems to completely solve the problem of providing a more stable income to western Kansas wheat farmers from year to year. Saving in years when crop yields are high will be successful only if the farmer has enough favorable years in which to build up a reserve before he encounters a poor year. Use of credit is open to the same difficulty since several poor years might result in a dangerously large debt. Grain storage and crop insurance afford protection against loss but do not assure an annual income large enough to cover minimum living expenses. The failure of these methods to meet the income problem in the past points to the need for other measures.

One plan that shows promise is a "personal income tax adjustment" plan,

This would require a revision in the Federal income tax law which would permit all persons filing an individual income tax return to purchase "tax-saving certificates" from the United States Treasury. Purchases in any tax year would be limited to a certain percentage of the individual's taxable income. No tax would be paid on that part of income used for certificates until they are redeemed. At that time they would be included with other income reported for that year and taxed accordingly.

By purchasing tax-saving certificates in years when income is above average and redeeming them when income was below average, farmers (and other tax-payers with an irregular year-to-year income) would make substantial tax savings. Thus there would be a premium on the accumulation of financial reserve to offset the effects of changes in crop yields.

To illustrate the stabilizing effects of such a plan, suppose that the encumbered owner used one-half of his taxable income to buy tax-saving certificates, and that the certificates are redeemed in years when net income after tax is less than \$1,400. As a result, the number of years in which the income available for family living would fall below the minimum would be reduced from 14 to eight and the years of deficit income from eight to four. If this farmer also carried crop insurance even greater stability could be gained.

This method, along with others used by farmers in the western Kansas wheat area, could help reduce damaging year-to-year fluctuations in income. However, it will not help farmers who have poor crops before a reserve can be accumulated and other methods would be needed. Among those that deserve further study are the flexible debt payment plan which permits the amount of principal to be repaid annually to vary with the operator's income, and the use of emergency credit to assist farmers when they have poor crops for several seasons.

E. Lloyd Barber

Bureau of Agricultural Economics

## Outlook Highlights

. . . NOVEMBER 1950

### Nation's Output Rises

The high rate of activity on our farms and in factories and businesses is expected to push the value of the goods and services produced in the Nation this year up to 277 billion dollars, 18 billion more than the 1948 record and 21 billion more than last year.

The value of goods and services produced picked up steadily during 1950 as economic activity climbed to record levels. In the first quarter of this year, the value, figured on an annual rate basis, was 262½ billion dollars. In the July-September quarter, the rate was up to 282 billion.

About one-seventh of the gain over 1949 was due to the increase in prices, the rest to increased production. All of the gain over 1948 was due to larger production, since prices in the two years are about the same.

### Farm Exports Down

The value of agricultural exports in the first half of this year was down to 1½ billion dollars, a fourth less than in the same period of 1949. A decline in the volume of exports accounted for about two-thirds of the drop; the rest was due to lower prices. Most of the drop in the first half was accounted for by smaller exports of grain and grain products.

### Cotton Demand Strong

With the cotton textile industry booming, demand for cotton is very strong. Average spot prices of cotton jumped 6.87 cents per pound from June through September and Middling 15/16 inch set a record of 41.20 cents on September 23.

No marketing quotas or acreage restrictions will be imposed on the 1951 cotton crop, the Secretary of Agriculture has announced. He also expressed the hope that cotton farmers would produce 16 million bales next year. The 1950 crop was only 9.7 million bales.

(Continued on p. 16)

# Off-Farm Income A Big Item To Many Families

INCOME FROM off the farm is an important source of revenue to many farm families, especially those in the very low farm income brackets. A survey made by BAE shows that in 1946, income of farm operator families from off-farm sources amounted to 5½ billion dollars, while net income from farming was about 15 billion.

The survey provided the first detailed data on the off-farm income of farm operator families. In recent years, income from farming has dropped below 1946, while most types of nonagricultural income have increased. It is likely that off-farm income in 1949 was even more important to farm operator families than in 1946. The same probably will be the case for 1950.

Of all farm operator families, 63 percent reported receiving some income from off-farm sources in 1946. Largest source was civilian wages and salaries which were received by 44 percent. The average for these families was \$1,350. Runner-up was net rents and royalties which were reported by about 12 percent and averaged \$714 per family.

About a tenth of the families reported receiving veterans' payments which averaged \$553 per family receiving them. Because of the war, veterans' payments were unusually high in 1946. Armed Forces pay was reported by 7 percent and social security or other nonveteran Government assistance by the same proportion. The former averaged \$539 per family and the latter \$309.

Other types of off-farm income were each reported by 5 percent or less of the families questioned. These included net income from another business or profession, interest and dividends, receipts from the operation of another farm, income from roomers and boarders, dependency allotments and "other" sources. Income from

these sources was 16 percent of total off-farm income.

In general, off-farm income was larger and reported more frequently by families at the top and the bottom of the farm income scale. Of the farm families who lost money from farming, 82 percent had some kind of off-farm income and the average for those receiving it was \$2,081. Civilian wages and salaries were received by 60 percent of the families who lost money while net rents and royalties were received by 15 percent and veterans' payments by the same percentage.

Of the families who reported a net cash farm income of \$10,000 or more, 63 percent had off-farm income and the average for these families was \$2,185. Wages and salaries were less important than for families in the low income brackets with only 28 percent reporting income from this source. Twenty-four percent listed interest and dividend income. Both rents and royalties and income from other business or profession were reported by around 15 percent.

Jeanne Lear

Bureau of Agricultural Economics

## FARM OPERATORS' OFF-FARM INCOME

### AVERAGE PER FARM FAMILY, 1946



### SOURCES OF OFF-FARM INCOME



\*INCLUDES INCOME FROM OPERATION OF OTHER FARM, ROOMERS AND BOARDERS, INTEREST, DIVIDENDS, AND OTHER SOURCES

# More Improved Grass, Legume Seed Is on the Way

SUPPLIES of certified seed of certain improved varieties of grasses and legumes are being built up at a rapid rate under the recently organized National Foundation Seed Project. Within a few years supplies should be adequate to meet farmers' needs.

Some of the improved forage crop varieties which have been created by the plant breeders of the State agricultural experiment stations and the USDA are as much of an improvement over old varieties as hybrid corn was an improvement over open-pollinated corn. Research has proved them to be more productive because of disease resistance, winter hardiness and other superior characteristics, and more efficient as fertility building and soil conserving crops. Some furnish more feed nutrients for livestock.

## Better Varieties Scarce

The better varieties of grasses and legumes are not in general use on farms because of inadequate seed supplies. Many farmers who want to plant them have been unable to get the seed from their local dealers. Atlantic alfalfa, for example, was released by the New Jersey Experiment Station about 1940. It is a superior variety adapted over a wide area where bacterial wilt of alfalfa is not a problem. Yet in 1950—10 years after it was released—only 6,000 pounds of certified seed was available for planting.

The difficulties are due to complex problems involving seed production, seed identification, financial risks, and other factors. The National Foundation Seed Project was organized two years ago to help overcome these difficulties. It teams the facilities of Federal, State, and private agencies into an organized effort to increase, at a rapid rate, the certified seed supply of superior varieties of small seeded forage crops.

Responsibility for leadership of the project rests in the Bureau of Plant

Industry, Soils, and Agricultural Engineering. Funds are provided under the Research and Marketing Act. Forage crop scientists of that Bureau and cooperating State agricultural experiment stations develop the new varieties, determine areas of adaptation and areas in which seed can be produced, and develop the technology for efficient seed production. At the present time 20 States are cooperating in the project.

## CCC Assures Market

The Commodity Credit Corporation assists by assuring a market for the foundation seed at a fair price through the Grain Branch of the Production and Marketing Administration. Seed purchases are made with CCC funds and foundation seed is stockpiled to insure seed growers a continuous flow.

Maintaining the genetic purity of varieties is the responsibility of the State seed certification agencies. Seed certification insures trueness of variety. The International Crop Improvement Association and cooperating State seed certification agencies have set up safe standards for growing grass and legume seed outside of their forage adapted areas.

The seed trade has additional responsibility of getting certified seed of the superior varieties into the hands of local seed dealers. State extension services are to carry out the educational program in seed producing and seed consuming areas.

## Planning Committee

The project is guided by a Planning Committee made up of representatives from the various cooperating organizations which is responsible for policies, plans, and procedures. The Planning Committee allocates breeders and foundation seed, recommends foundation seed prices, and determines the areas of production for the various seed classes of each variety.

Foundation seed is the progeny of breeders seed and is the first major seed increase of an improved variety grown and handled so as to maintain its superior genetic qualities. Registered seed is the progeny of foundation seed and is used as planting stock for the production of certified seed. Certified seed is used by farmers in hay, pasture, and soil improvement seedings.

#### New Varieties Coming

Foundation seed stocks of Ranger, Buffalo, and Atlantic alfalfa; Kenland red clover; Tift sudangrass; and Climax lespedeza are being built up at the present time. Most of the seed is being produced on farms and ranches in the Great Plains, Inter-Mountain, and West Coast States where climatic conditions permit big yields and where irrigation can help to insure the production of a seed crop each year.

Other forage crop varieties will be added to the project as they become available from State and Federal plant breeders. Some improved varieties are already in the final stage of testing while others are still being developed.

The first varieties included in the active foundation seed increase program were Atlantic alfalfa, Kenland red clover, and Tift sudangrass. Progress with these varieties during the

first two years of operation (1949-50), as shown in the table above, illustrates the potentials from this organized effort. Seed stocks have been built up as much as one hundred fold.

Foundation seed plantings of Ranger and Buffalo alfalfa are being increased so that the production of certified seed should meet farmer demand within a few years. Progress is already being made in building up the certified seed supplies for there should be more than 5 million pounds available for planting in 1951.

Certified Tift sudangrass, being an annual, can be increased to meet maximum demand within the next two years. Yet, three years ago the variety was almost lost because there was no organized effort to maintain foundation seed.

#### Near Goal for Kenland

The 110,000 pounds of foundation seed of Kenland clover, when increased for the two additional generations, will provide 15 to 20 million pounds of certified seed—enough to plant 40 to 45 percent of the red clover acreage in the area to which Kenland is adapted. The production of 200,000 pounds annually of Kenland foundation seed, when increased through the registered and certified seed generations, will supply farmers' needs for this variety.

All of the foundation seed produced in 1950 will be used for further seed increases through the registered and certified classes.

C. S. Garrison  
Bureau of Plant Industry, Soils, and  
Agricultural Engineering

	Breeders seed available	Foundation seed produced
	Pounds	Pounds
Kenland red clover.....	1,162	110,000
Tift sudangrass.....	308	18,000
Atlantic alfalfa.....	98½	5,000

### Wasted Tomatoes Cost Farmers, Consumers

Tomatoes that are grown but never eaten are costly to both farmers and consumers. A study made in South Carolina last year showed that 43 out of every 100 pounds of tomatoes that matured on the vine failed to reach consumers.

Spoilage losses began in the fields and were encountered at each stage of marketing. Of every 100 pounds of tomatoes ready for harvest, 14.8 pounds were discarded at picking, 17.8 pounds at the packing shed, 9.2 pounds during repacking operations and 1½ pounds in retail stores. These losses affected returns to producers and prices to consumers since handling and shipping charges were paid for wasted tomatoes as well as good ones.

# Soybean Acreage, Output Far Above Past Records

SOYBEAN production in the United States this fall is 275 million bushels, 24 percent more than last year and 23 percent larger than the 1948 record, according to pre-harvest estimates. The tremendous production results from a 30 percent expansion over last year in acreage for beans and near-record yields.

The increase in acreage of soybeans came largely on land diverted from crops under acreage allotments, especially corn and cotton, but also wheat and peanuts in some areas. Soybeans also were planted to some extent in place of oats and other crops in some sections where these crops could not be planted on time because of unfavorable weather. The rise in price of soybeans during the spring was an additional incentive.

Larger acreages of soybeans for beans were planted than last year in each of the 28 States in which the crop is of commercial importance. Acreage were largest on record in 17 of these States. The expansion was relatively greatest in the Mississippi Delta, in the Plains States adjoining the Corn Belt, and in the Lake States at the northern edge of the Corn Belt. In these areas, the soybean crop already had made the greatest expansion from prewar. Apparently, an increasing number of farmers outside the central Corn Belt are including soybeans in their plans.

## Corn Belt Dominates

The Corn Belt (Illinois, Iowa, Indiana, Ohio, Missouri) continued to dominate soybean production, contributing 80 percent of the total crop this year. The Lake States (Minnesota, Wisconsin, Michigan) were second with 7 percent. The Delta States (Arkansas, Mississippi, Louisiana) and the Atlantic Coast States (North Carolina, Virginia, Maryland, and Delaware) ranked third and fourth.

Here are the changes in acreage of soybeans for beans in the four areas in recent years: Corn Belt—1942-45 to

1949, down 10 percent; 1949 to 1950 up 25 percent. Lake States—1942-45 to 1949, up 65 percent; 1949 to 1950, up 50 percent. Delta States—1942-45 to 1949, up 10 percent; 1949 to 1950, up 93 percent. Atlantic Coast States—1942-45 to 1949, up 16 percent; 1949 to 1950, up 11 percent.

Production in Kansas, Nebraska, South Dakota, and North Dakota, is a small percentage of the national total but shows a strong potential. Acreage for beans increased only 9 percent from the World War II level to 1949 but jumped to 47 percent over the 1949 acreage this year.

In 10 other States in the south and east for which estimates are available, the total acreage for beans increased 26 percent from 1942-45 to 1949 and 23 percent from 1949 to 1950.

## Other Crops Expanded

A number of other crops also were expanded this year in the several soybean areas as a result of diverting land from crops under acreage allotments. In the five Corn Belt States, the total corn and wheat acreage was reduced about 5 million acres from last year. Soybeans were increased almost 2 million acres, hay crops slightly more than 2 million acres, and oats 340,000 acres. Increases in the acreage of barley sorghums, pasture, and fallow land accounted for most of the remainder. The increase in soybeans was equal to about 55 percent of the reduction in corn. It is apparent that soybeans were planted on much of the land released by wheat acreage allotments and that a substantial acreage of clover and meadow that normally would have been plowed up for corn was left to produce hay and pasture. The favorable outlook for livestock encouraged high production of feed grains and forage.

In the other soybean regions, production of soybeans is much more localized than in the Corn Belt.

## Prices of Farm Products

[Estimates of average prices received by farmers at local farm markets based on reports to the Bureau of Agricultural Economics. Average of reports covering the United States weighted according to relative importance of district and State.]

Commodity	5-year average		Oct. 15, 1949	Sept. 15, 1950	Oct. 15, 1950	Effective parity prices Oct. 15, 1950
	Base period price 1910-14 <sup>1</sup>	January 1935- December 1939				
Basic commodities:						
Cotton (pound)	cents	12.4	10.34	28.70	39.98	38.90
Wheat (bushel)	dollars	3.884	.837	1.89	1.94	1.91
Rice (cwt.) <sup>2</sup>	dc.	1.98	1.65	3.84	4.57	4.99
Corn (bushel)	do.	1.642	.691	1.09	1.44	1.37
Peanuts (pound)	cents	4.8	3.55	10.2	10.9	10.7
Designated nonbasic commodities:						
Potatoes (bushel)	dollars	1.12	.717	1.29	1.05	.858
Butter at (pound)	cents	27.7	29.1	62.1	60.9	62.8
Milk, wholesale (100 lb.)	dollar	1.73	1.81	4.17	4.01	4.23
Wool (pound)	cents	20.1	23.8	46.5	62.2	64.5
Other nonbasic commodities:						
Barley (bushel)	dollars	1.619	.533	1.07	1.14	1.12
Cottonseed (ton)	dc.	26.30	27.52	41.80	78.80	81.50
Flaxseed (bushel)	do	1.71	1.69	3.44	3.24	2.96
Oats (bushel)	do	1.399	.340	.623	.728	.735
Rye (bushel)	do	1.720	.554	1.28	1.29	1.27
Sorghum, grain (100 lb.)	do	1.21	1.17	1.72	1.77	1.63
Soybeans (bushel)	do	1.00	.954	2.09	2.26	2.03
Sweetpotatoes (bushel)	do	.921	.807	1.96	1.92	1.54
Steer cattle (100 lb.)	do	6.78	6.56	19.20	24.70	24.30
Chickens (pound)	cents	11.4	14.9	23.2	24.5	22.7
Eggs (dozen)	do	21.5	21.7	51.4	40.4	43.2
Hogs (100 lb.)	dollars	7.52	8.38	17.60	21.10	19.20
Lambs (100 lb.)	do	7.48	7.79	21.50	25.60	25.80
Veal calves (100 lb.)	do	7.62	7.80	21.70	28.00	27.50
Oranges, on tree (box)	do	2.29	1.11	1.39	1.23	1.57
Apples (bushel)	dc.	1.04	.90	1.43	2.38	1.98
Hay, baled (ton)	dc.	8.71	11.20	21.50	20.30	20.60

<sup>1</sup> Adjusted base period prices 1910-14, based on 120-month average January 1940-December 1949 unless otherwise noted.

<sup>2</sup> Parity prices are computed under the provisions of title III, subtitle A, section 301 (a) of the Agricultural Adjustment Act of 1938 as amended by the Agricultural Acts of 1948 and 1949.

<sup>3</sup> 60-month average, August 1909-July 1914.

<sup>4</sup> Revised.

<sup>5</sup> 10-season average 1919-28.

<sup>6</sup> Transitional parity, 65 percent of parity price computed under formula in use prior to Jan. 1, 1950.

<sup>7</sup> Preliminary.

Therefore, State-wide figures on acreage shifts are of limited value in judging the competitive strength of soybeans. However, in the Lake States where soybeans are grown in a substantial part of the commercial corn area, the increase in acreage of soybeans was less than two-thirds of the decrease in acreage of corn. In the Delta States, corn was increased more than soybeans, and the combined increase for both was less than half the reduction in acreage of cotton.

The national average yield of soybeans was estimated in October at 21.3 bushels per acre, exceeded only by the 21.4 bushel yield in 1948 and the yield of 22.4 bushels in 1949. The average for 1945-49 was 7.3 bushels higher than for 1925-29. The improvement in yields has been an important reason for the increasing popularity of soybeans.

One of the main factors contributing

to the higher yields is the development and use of improved varieties. Improved practices in planting, tillage, and harvesting also have contributed to higher yields. The upward trend in yields are expected to continue as the possibilities from improved varieties and better cultural practices are still far from exhausted.

The farm price for this year's crop of soybeans will probably average higher than that for last year's crop in spite of the larger production. Demand for soybean oil and meal is likely to continue strong during the next 12 months because of high industrial activity and high consumer incomes. With supplies of cottonseed oil and cottonseed meal smaller than last year, more oil and meal from soybeans will be needed.

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## Economic Trends Affecting Agriculture

Year and month	Industrial production (1935-39=100) <sup>1</sup>	Total income of industrial workers (1935-39=100) <sup>2</sup>	Average earnings of factory workers per worker (1910-14=100) <sup>3</sup>	Wholesale prices of all commodities (1910-14=100) <sup>4</sup>	Index numbers of prices paid by farmers (1910-14=100) <sup>5</sup>			Index numbers of prices received by farmers (1910-14=100) <sup>6</sup>			
					Commodities	Wage rates for hired farm labor <sup>6</sup>	Commodities, interest, taxes, and wage rates	Livestock and products			
								Dairy products	Poultry and eggs	Meat animals	All livestock
1910-14 average	58	50	100	100	100	100	100	100	100	100	100
1915-19 average	72	90	152	158	149	147	148	147	153	162	157
1920-24 average	75	122	221	160	159	181	168	159	163	121	140
1925-29 average	98	129	232	143	151	184	161	161	155	145	153
1930-34 average	74	78	179	107	117	121	124	105	94	83	91
1935-39 average	100	100	199	118	124	121	125	119	108	117	115
1940-44 average	192	236	315	139	148	211	152	169	145	166	162
1945 average	203	291	389	154	180	359	189	230	194	207	210
1946 average	170	276	382	177	197	387	207	267	197	248	241
1947 average	187	328	436	222	231	419	240	272	219	329	287
1948 average	192	354	472	241	250	442	259	300	235	361	314
1949 average	176	325	478	226	240	429	250	251	219	311	272
1949											
October	166	307	481	222	237	414	246	268	230	301	271
November	173	313	474	221	236	-----	245	261	216	286	262
December	179	322	489	221	237	-----	246	261	194	280	255
1950											
January	183	323	490	221	238	429	249	284	188	286	249
February	180	416	491	223	237	-----	248	260	188	306	257
March	187	337	493	223	239	-----	250	243	165	308	258
April	190	340	496	223	240	427	261	235	161	312	250
May	195	349	502	228	244	-----	264	230	154	342	269
June	199	362	513	230	245	-----	265	227	156	342	268
July	196	368	516	238	247	429	256	232	173	371	287
August	208	391	526	243	248	-----	258	240	191	369	292
September	-----	-----	-----	247	252	-----	261	248	196	372	298
October	-----	-----	-----	253	427	-----	261	261	201	358	296
Index numbers of prices received by farmers (1910-14=100) <sup>1</sup>											
Year and month	Crops								All crops and livestock		
	Food grains	Feed grains and hay	To-bacco	Cotton	Oil-bearing crops	Fruit	Truck crops	All crops	Parity ratio <sup>12</sup>		
1910-14 average	100	100	100	100	100	100	-----	100	100	100	100
1915-19 average	193	161	183	175	201	126	-----	171	164	111	
1920-24 average	147	125	189	197	155	157	152	162	160	89	
1925-29 average	141	118	169	150	135	146	145	145	148	92	
1930-34 average	70	76	117	77	78	98	104	84	88	71	
1935-39 average	94	95	172	87	113	95	98	99	99	107	96
1940-44 average	123	119	241	138	170	150	164	145	154	101	
1945 average	172	161	360	178	226	244	207	203	206	109	
1946 average	201	196	376	237	260	250	182	227	234	113	
1947 average	270	249	374	272	363	212	226	263	275	115	
1948 average	250	250	380	270	351	174	214	252	285	110	
1949 average	219	170	398	245	242	199	201	223	249	100	
1949											
October	213	161	396	241	221	180	174	210	242	98	
November	215	157	369	233	220	172	213	210	237	97	
December	219	168	394	223	225	174	196	210	233	98	
1950											
January	218	170	382	222	228	185	261	219	235	94	
February	219	171	389	231	228	186	203	215	237	96	
March	224	174	389	236	230	193	168	215	237	95	
April	227	181	389	242	239	206	205	225	241	96	
May	230	190	387	246	248	195	178	223	247	97	
June	218	160	288	251	254	207	182	225	247	97	
Ju.y	226	165	387	278	267	211	200	236	263	103	
August	224	193	396	311	263	209	164	239	267	103	
September	221	194	428	336	303	217	126	243	272	104	
October	219	188	426	327	300	207	138	234	268	103	

<sup>1</sup> Federal Reserve Board; represent output of mining and manufacturing; monthly data adjusted for seasonal variation.

<sup>2</sup> Computed from data furnished by Bureau of Labor Statistics and Interstate Commerce Commission on pay rolls in mining, manufacturing, and transportation; monthly data adjusted for seasonal variation. Revised January 1950. <sup>3</sup> Bureau of Labor Statistics.

<sup>4</sup> Revised January 1950. <sup>5</sup> Farm wage rates simple averages of quarterly data, seasonally adjusted.

<sup>6</sup> Revised. Preliminary.

<sup>7</sup> Ratio of index of prices received to index of prices paid, interest, taxes, and wage rates. This parity ratio will not necessarily be identical to a weighted average percent of parity for all farm products, largely because parity prices for some products are on a transitional basis. <sup>8</sup> 1924 only.

# Outlook Highlights

(Continued from p. 9)

## Corn Prices Stronger

Corn prices will weaken as the harvest comes in this fall but are not expected to drop as far below the loan rate as they did last year. The advance this winter and spring probably will be at least as much as the usual seasonal gain.

## 363 Billion Smokes

United States civilians are expected to smoke 363 billion cigarettes this year, 3 percent more than in 1949 and a new record. Another 32 billion will be shipped overseas for overseas forces, U. S. territories and to foreign countries.

Cigar consumption this year is likely to be about the same as last—5.6 billion. Smoking tobacco output is set at 109 million pounds, 1 percent above 1949. Chewing tobacco output is down to 89 million pounds, a million less than last year and the lowest on record. Snuff consumption is expected to top last year's total of 41 million pounds by about 1 million.

## Large Fats and Oils Supply

Output of fats and oils in the year which began October 1 will be only slightly below last year's record, according to recent estimates. Output of cottonseed oil, peanut oil and butter will be down from last year while production of soybean oil, lard, tallow and greases will be up.

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